REMARKS

In the foregoing amendments, Applicants amend claim 8 and add new claims 17 and 18 to the application. Accordingly, claims 8, 11 – 14, 17, and 18 are now pending in the application for consideration by the Examiner. Applicants respectfully request reconsideration and allowance of these claims for reasons that follow.

Claim Rejections – 35 U.S.C. § 103

The Final Office Action mailed November 17, 2010 included a rejection of claims 8 and 11 – 14 under 35 U.S.C. §103(a) as being unpatentable over Braden (US 5,965,785) in view of Vercammen (US 7,279,089 B2) in two separate rejections. Applicants respectfully submit that the inventions defined in claims 8, 11 – 14, 17, and 18 are patently distinguishable from the combined teachings of Braden and Vercammen for reasons that follow.

Amended independent claim 8 defines a method for preventing corrosion of metal in an atmospheric distillation column for petroleum refining process, which comprises *adding only the (β-hydroxyethyl) trimethylammonium hydroxide to fluid containing water for preventing corrosion of metal and formation of hydrogen chloride, the fluid contacting an inside of the atmospheric distillation column for petroleum refining process*, the amount of added (β-hydroxyethyl) trimethylammonium hydroxide being adjusted to maintain a pH value thereof at a top line of the atmospheric distillation column at 5.5-6.5.

New dependent claim 17 specifically *defines that NaOH is <u>not</u> added to the fluid that contacts the inside of the atmospheric distillation column during the petroleum refining process*. The previously mentioned limitations in claim 11 and 17 are described in the Specification at page 21, line 11 to page 24, line 13. These portions of the Specification discuss the prevention

of corrosion of metal, among other things, in accordance with the present invention without the addition of caustic or sodium hydroxide (NaOH).

Independent claim 11 defines a method for preventing formation of hydrogen chloride in a crude oil atmospheric distillation unit, comprising "adding *only* the (β-hydroxyethyl) trimethylammonium hydroxide *to the desalted crude oil . . . and preventing corrosion of metal and formation of hydrogen chloride*."

New claim 18 defines a metal corrosion preventing method contained within a petroleum refining process, the metal corrosion preventing method ***consisting of*** preparing or obtaining the (β-hydroxyethyl) trimethylammonium hydroxide compound, and adding the (β-hydroxyethyl) trimethylammonium hydroxide to fluid containing water which contacts an inside of an atmospheric distillation column of a petroleum refining process, etc.

Applicants respectfully submit that the combined teachings of Braden and Vercammen do not disclose or suggest the processes defined in claims 8, 11, 17, and 18 or do not motivate one of ordinary skill in the art to the inventions defined in claims 8, 11, 17, and 18.

As explained in previously filed papers, the teachings of Braden propose a method of inhibiting corrosion within an atmospheric pipestill by feeding a blend of amines into the pipestill. However, the method of Braden requires that caustic (NaOH) is injected into the downstream of the desalter. Unfortunately, the use of caustic or caustic agent causes problems, such that the catalyst is poisoned. See, for example, Fig. 1 and column 4, lines 14-27 of Braden. Braden attempts to solve the problems associated with the addition of caustic (NaOH) by further adding a blend of amines to the pipestill. If the amines of Braden were replaced with the choline

of Vercammen, the combined method still requires the addition of caustic (NaOH) or caustic agent into the downstream of the desalter for inhibiting corrosion therein.

Applicants respectfully submit that claims 8, 11, 17, and 18 exclude the addition of caustic (NaOH) or caustic agent, which is required in the combined teachings of Braden and Vercammen. For example, present claim 8 requires *adding only the (β-hydroxyethyl) trimethylammonium hydroxide compound to fluid containing water for preventing corrosion of the metal and formation of hydrogen chloride, the fluid contacting an inside of the atmospheric distillation column for petroleum refining process*. In other words, amended claim 8 only adds (β-hydroxyethyl) trimethylammonium hydroxide "for preventing corrosion of the metal and formation of hydrogen chloride" to the fluid containing water. The method of Applicants' claims can inhibit corrosion without the use of caustic (NaOH) or caustic agent. Therefore, the presently claimed invention will not lead to deterioration of the catalyst even if the (β-hydroxyethyl) trimethylammonium hydroxide [choline] is added in excess (Spec. p. 13, ll. 9-16). Since neither Braden nor Vercammen, either alone or in combination, propose a method of inhibiting metal corrosion without the use of caustic (NaOH) or caustic agent and only by adding choline to fluid containing water for preventing corrosion of the metal and formation of hydrogen chloride, Applicants respectfully submit that the invention defined in claim 8 is patently distinguishable from these teachings.

New dependent claim 17, which depends from claim 8, specifically *defines that NaOH is not added to the fluid that contacts the inside of the atmospheric distillation column during the petroleum refining process*. Applicants respectfully submit that claim 17 is patently distinguishable from the combined teachings of Braden and Vercammen for the reasons set forth

above for claim 8. Namely, Braden and/or Vercammen require the use of caustic (NaOH) or caustic agent for inhibiting corrosion, which is excluded from claim 17. Accordingly, claim 17 is patently distinguishable from the combined teachings of Braden and Vercammen.

In the Advisory Action mailed February 24, 2011, the Examiner commented that Braden clearly teaches that the addition of caustic and the addition of amines happen in two separate steps with the addition of caustic occurring first, and that Applicants' claims do not exclude "caustic" (NaOH) as being present in the fluid containing water which contacts the inside of the atmospheric distillation column. While Applicants do not agree with this position, Applicants respectfully submit that amended claim 8 requires adding only the (β-hydroxyethyl) trimethylammonium hydroxide compound to fluid containing water *for preventing corrosion of the metal and formation of hydrogen chloride*. Since the addition caustic (NaOH) or caustic agent is necessary within the combined teachings of Branden and Vercammen for inhibiting (i.e., preventing) corrosion, these teachings cannot contemplate or suggest a method, as defined in claim 8, that requires adding only the (β-hydroxyethyl) trimethylammonium hydroxide compound to fluid containing water *for preventing corrosion of the metal and formation of hydrogen chloride*. At least for this reason, Applicants respectfully submit that the invention defined in claim 8 is patently distinguishable from the teachings of Branden and Vercammen.

Independent claim 11 defines a method for preventing formation of hydrogen chloride in a crude oil atmospheric distillation unit, comprising "adding *only* the (β-hydroxyethyl) trimethylammonium hydroxide *to the desalted crude oil . . . and preventing corrosion of the metal and formation of hydrogen chloride*." While the Examiner commented that Braden teaches adding caustic in a separate step to the fluid containing water, any such teaching in

Braden is not pertinent to the invention in claim 11, because this claim requires adding only the (β-hydroxyethyl) trimethylammonium hydroxide to the "*desalted crude oil . . . and preventing corrosion of the metal and formation of hydrogen chloride.*" At least for these reasons, Applicants respectfully submit that the invention defined in claim 11 is patently distinguishable from the combined teachings of Braden and Vercammen.

Claims 12 – 14 depend directly from claim 11. Therefore, these claims are patently distinguishable from the teachings of Braden and Vercammen based at least on their dependency from claim 11 and/or the further features recited therein.

New claim 18 defines a metal corrosion preventing method contained within a petroleum refining process, the metal corrosion preventing method ***consisting of*** preparing or obtaining the (β-hydroxyethyl) trimethylammonium hydroxide compound, and adding the (β-hydroxyethyl) trimethylammonium hydroxide to fluid containing water which contacts an inside of an atmospheric distillation column of petroleum refining process, etc. The use of the transitional expression "consisting of" in claim 18 excludes the addition of caustic required in the combined teachings of Braden and Vercammen. Therefore, Applicants respectfully submit that the invention defined in claim 18 is patently distinguishable from the combined teachings of Braden and Vercammen.

Conclusion

In view of the foregoing, Applicants submit that this application is in condition for allowance. A timely notice to that effect is respectfully requested. If questions relating to patentability remain, the Examiner is invited to contact the undersigned by telephone.

A Request for Continued Examination (RCE) is being submitted herewith. No other fees are believed to be due. If any other fees are in fact due or if there are any problems with the payment of fees, please charge any underpayments and credit any overpayments to Deposit Account No. 50-1147.

Respectfully submitted,

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